DERWENT-ACC-NO: 2005-632112

DERWENT-WEEK: 200864



TITLE: Binder for multilayer film structures, e.g. heat-sealable metallised film for packaging chips or sweets, comprises a mixture of polypropylene and a special maleic anhydride-grafted polyolefin mixture

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PRIORITY-DATA: 2004EP-290308 (February 6, 2004)

PATENT-FAMILY:

| PUB-NO | PUB-DATE | LANGUAGE |
|---|---|---|
| **EP 1561574 A1** | August 10, 2005 | EN |
| **EP 1561574 B1** | August 13, 2008 | FR |
| DE 602004015716 E | September 25, 2008 | DE |

DESIGNATED-STATES: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT
LU LV MC MK NL PT RO SE SI SK TR AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU
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APPLICATION-DATA:

| PUB-NO | APPL-DESCRIPTOR | APPL-NO | APPL-DATE |
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| EP 1561574A1 | N/A | 2004EP-290308 | February 6, 2004 |
| DE602004015716E | N/A | 2004DE-60015716 | February 6, 2004 |
| EP 1561574B1 | N/A | 2004EP-290308 | February 6, 2004 |

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| TYPE | IPC | DATE |
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| CIPP | B32B27/32 | 20060101 |
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| CIPS | B32B15/08 | 20060101 |
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CIPS C08L23/10 20060101
CIPS C09J123/02 20060101
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CIPS C09J123/02 20060101

ABSTRACTED-PUB-NO: EP 1561574 A1

BASIC-ABSTRACT:

NOVELTY - A binder comprising 5-50 wt% of a mixture (A) and 50-95 wt% polypropylene (PP) (co)polymer, in which (A) contains 5-100 wt% of an unsaturated acid-grafted mixture of metallocene polyethylene and LLDPE or PP
(co)polymer and 95-0 wt% polyethylene homo- or co-polymer or elastomer.

DESCRIPTION - A binder comprising (A) 5-50 wt% of a mixture containing (a1)
5-100 wt% of a mixture of copolymers comprising (C1) 90-20 wt% metallocene
polyethylene with a density of 0.865-0.915 and (C2) 10-80 wt% non-metallocene
LLDPE or polypropylene homo- or co-polymer, the mixture (C1 + C2) being
co-grafted with an unsaturated carboxylic acid monomer or a functional
derivative thereof and (a2) 95-0 wt% polyethylene (homopolymer, copolymer or
elastomer), such that (A) has a grafting monomer content of 30-100000 ppm and
an MFI (190/2.16) of 0.1-30 g/10 min, and (B) 50-95 wt% polypropylene homo- or
co-polymer.

INDEPENDENT CLAIMS are also included for:

(1) a multilayer structure with a layer (2) of binder as above;

(2) film with a multilayer structure as above;

(3) film comprising a printed layer of biaxially-oriented polypropylene (BOPP)
or polyethylene terephthalate (BOPET) and an adhesively-bonded metallised
multilayer film as above, in which the film may or may not be biaxially-oriented and the metal layer (1) is directly bonded to the BOPP or

BOPET by the adhesive; and

(4) objects made with multi-layer structures or film as above.

USE - For the production of multi-layer structures (claimed). Applications include sachets, bags or packets for chips, biscuits, sweets or meat.

ADVANTAGE - Enables the production of heat-sealable packaging with a metallised barrier layer, which can be opened at the seal without causing structural damage such as delamination or preferential peeling of the metal from the plastic.

EQUIVALENT-ABSTRACTS:

POLYMERS

Preferred Structures: Multi-layer structures with a metallic layer bonded to layer (2), a layer (3) of polypropylene homo- or co-polymer on the other side of (2) and a heat-sealable layer (4) of ethylene/propylene/butylene terpolymer, ethylene/propylene copolymer and/or metallocene polyethylene on the other side of layer (3).

Preferred Objects: Packaging.

Tests were carried out with multi-layer film comprising a layer of BOPP (20 microns), a printed layer, a layer of adhesive and a multilayer film (MCPP; 25 microns). The MCPP comprised (1) a layer of aluminum (250 Angstrom), (2) a 3-micron layer comprising (A) 30 wt% of a mixture of 25 wt% metallocene polyethylene (C1) (density 0.870; with 1-octene as comonomer) and LLDPE (C2) (density 0.920; 1-butene a scomonomer), the mixture being grafted (0.8%) with maleic anhydride, and 75 wt% LLDPE (D) (density 0.910; 1-butene as comonomer) and (B) 70 wt% polypropylene (PP) homopolymer (MFI = 7; d = 0.900), (3) a 17-micron layer of PP homopolymer (as for B) and (4) a 5-micron layer of

propylene/ethylene/butylene terpolymer (MFI 7; d 0.900; flexural modulus 1000
MPa). Heat-sealed sachets made from this film could opened at the seal with a
peeling force of 212 (50) g/15 mm just after sealing, or 180 (30) g/15 mm one
month after sealing; failure occurred in layer (2) with the aluminum (1)
remaining strongly attached to (2). Values in brackets are for similar film in
which layer (2) contained 0% of mixture (A); in this case failure occurred at
the interface between layers (1) and (2).

TITLE-TERMS: BIND MULTILAYER FILM STRUCTURE HEAT SEAL METALLISE PACKAGE CHIP
SWEET COMPRISE MIXTURE POLYPROPYLENE SPECIAL MALEIC ANHYDRIDE GRAFT
POLYOLEFIN

DERWENT-CLASS: A17 A92 P73

CPI-CODES: A04-F01A; A04-G01E; A04-G03E1; A07-A02C; A12-S06C;

ENHANCED-POLYMER-INDEXING:
Polymer Index [1.1]
2004 ; G0055*R G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D84; G0044
G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D82 R00326 1013; G0044 G0033
G0022 D01 D02 D12 D10 D51 D53 D58 D83 R00964 1145; G0760*R G0022 D01 D51
D53 E00 H0146; G0760 G0022 D01 D23 D22 D31 D42 D51 D53 D59 D65 D75 D84
F39 E00 E01 H0146 R00843 790; H0033 H0011; S9999 S1285*R; H0088 H0011;
P1150;
Polymer Index [1.2]
2004 ; G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D82 R00326 1013;
G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D83 R00964 1145; G0760*R
G0022 D01 D51 D53 E00 H0146; G0760 G0022 D01 D23 D22 D31 D42 D51 D53 D59
D65 D75 D84 F39 E00 E01 H0146 R00843 790; H0022 H0011; S9999 S1285*R;
H0088 H0011; P1150; P1285;
Polymer Index [1.3]
2004 ; G0033*R G0022 D01 D02 D51 D53; G0044 G0033 G0022 D01 D02 D12 D10

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    D51 D53 D58 D82 R00326 1013;  G0760*R G0022 D01 D51 D53 E00
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    G0022 D01 D23 D22 D31 D42 D51 D53 D59 D65 D75 D84 F39 E00 E01
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P1150;
Polymer Index [1.4]
    2004 ; G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D83 R00964
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    G0760*R G0022 D01 D51 D53 E00 H0146;  G0760 G0022 D01 D23 D22 D31
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H0011*R;
    S9999 S1285*R;  H0088 H0011;  P1150;  P1343;
Polymer Index [1.5]
    2004 ; ND01;  K9676*R;  K9574 K9483;  Q9999 Q8413 Q8399 Q8366;
Q9999
    Q8526 Q8366;  Q9999 Q7589*R;  B9999 B5243*R B4740;  B9999 B4046
B3930
    B3838 B3747;
Polymer Index [1.6]
    2004 ; Q9999 Q6644*R;  B9999 B3601 B3554;  K9745*R;
Polymer Index [2.1]
    2004 ; G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D82 R00326
1013;
    G0760*R G0022 D01 D51 D53 E00 H0146;  G0760 G0022 D01 D23 D22 D31
D42 D51
    D53 D59 D65 D75 D84 F39 E00 E01 H0146 R00843 790;  H0000;
H0011*R;
    H0124*R;  S9999 S1285*R;  H0088 H0011;  P1150;  P1161;
Polymer Index [2.2]
    2004 ; ND01;  K9676*R;  K9574 K9483;  Q9999 Q8413 Q8399 Q8366;
Q9999
    Q8526 Q8366;  Q9999 Q7589*R;  B9999 B5243*R B4740;  B9999 B4046
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    B3838 B3747;
Polymer Index [2.3]
    2004 ; B9999 B4831*R B4740;
Polymer Index [2.4]
    2004 ; G0760 G0022 D01 D23 D22 D31 D42 D51 D53 D59 D65 D75 D84
F39 E00
    E01 R00843 790;  H0226;
Polymer Index [3.1]
    2004 ; G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D82 R00326
1013;
    G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D88 R00936 251;
G0760*R
    G0022 D01 D51 D53 E00 H0146;  G0760 G0022 D01 D23 D22 D31 D42 D51
D53 D59
    D65 D75 D84 F39 E00 E01 H0146 R00843 790;  H0022 H0011;  S9999
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S1285*R;
H0088 H0011; P1150;
Polymer Index [3.2]
2004 ; G0033*R G0022 D01 D02 D51 D53; G0760*R G0022 D01 D51 D53
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H0146; G0760 G0022 D01 D23 D22 D31 D42 D51 D53 D59 D65 D75 D84
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E01 H0146 R00843 790; H0000; H0011*R; S9999 S1285*R; H0088
H0011;
P1150;
Polymer Index [3.3]
2004 ; ND01; K9676*R; K9574 K9483; Q9999 Q8413 Q8399 Q8366;
Q9999
Q8526 Q8366; Q9999 Q7589*R; B9999 B5243*R B4740; B9999 B4046
B3930
B3838 B3747;
Polymer Index [3.4]
2004 ; G0760 G0022 D01 D23 D22 D31 D42 D51 D53 D59 D65 D75 D84
F39 E00
E01 R00843 790; H0226;
Polymer Index [3.5]
2004 ; D01 D62*R D61 D68 Gm; C999 C033 C000; C999 C293;
Polymer Index [4.1]
2004 ; G0044 G0033 G0022 D01 D02 D12 D10 D51 D53 D58 D83 R00964
1145;
H0000; H0011*R; S9999 S1285*R; P1150; P1343;
Polymer Index [4.2]
2004 ; P0884 P1978 P0839 H0293 F41 D01 D11 D10 D19 D18 D31 D50
D63 D76
D90 F90 E21 E00; S9999 S1285*R;
Polymer Index [4.3]
2004 ; ND01; K9676*R; K9574 K9483; Q9999 Q8413 Q8399 Q8366;
Q9999
Q8526 Q8366; Q9999 Q7589*R; B9999 B5243*R B4740; B9999 B4046
B3930
B3838 B3747;
Polymer Index [4.4]
2004 ; B9999 B5163 B5152 B4740; B9999 B5425 B5414 B5403 B5276;
K9552
K9483; B9999 B5481 B5403 B5276;

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CPI Secondary Accession Numbers: 2005-189876
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